

27. The fluid vapor distillation apparatus of claim **21**, where the evaporator condenser apparatus further comprises a sump, plurality of tubes and an outer shell, the interior of plurality of tubes being fluidly connected to the sump and the steam chest and defining the evaporator, the condenser being defined by the exterior of the tubes and inside surface of the outer shell.

28. The fluid vapor distillation apparatus of claim **27** wherein said evaporator condenser apparatus further comprising packing inside the plurality tubes.

29. The fluid vapor distillation apparatus of claim **28** wherein said packing is a rod with a plurality of nubs that extend from the outer surface of the rod.

30. The fluid vapor distillation apparatus of claim **29**, wherein the rod may be 0.25 inch smaller diameter than an inside diameter of the tube.

31. The fluid vapor distillation apparatus of claim **21**, the evaporator condenser further comprising a tube sheet that separates the steam chest from the condenser and is sealed to the plurality of tubes.

32. The fluid vapor distillation apparatus of claim **31**, the evaporator condenser further comprising a compressed steam conduit that passes through the steam chest and the tube sheet to fluidly connect the compressor to the condenser.

33. The fluid vapor distillation apparatus of claim **31**, where the compressed steam conduit passes into the condenser section and includes openings to distribute the compressed steam along the length of the condenser.

34. A fluid vapor distillation apparatus comprising:

- a source water input;
- a product water output;
- an evaporator condenser apparatus that transforms source water into water vapor and compressed water vapor into product water;
- a compressor receiving water vapor and producing compressed vapor;

a heat exchanger comprising:

- an outer tube;
- at least one inner tube; and
- a first end and a second end;

a first connector is attached to the first end and a second connector attached to the second end, each of the first and second connectors comprising:

- a first portion physically connected to the outer tube, the first portion having a first port fluidly connected to the inside of the outer tube and a seal to the outer surface of the at least one inner tube;
- a second portion having a second port fluidly connected to the inside of the at least one inner tube port and a seal to the outer surface of the at least one inner tube; and

a fluid path between the first portion and the second portion to the outside of the heat exchanger whereby fluid leaking past the first portion seal or the second portion seal may exit the heat exchanger;

wherein the first connector is fluidly connected to the source water inlet and product water output and the second connector is fluidly connected to the evaporator condenser apparatus

35. The fluid vapor distillation apparatus of claim **34**, wherein the first portion seal to outside of the at least one inner tube is an O-ring.

36. The fluid vapor distillation apparatus of claim **34**, wherein the second portion seal to outside of the at least one inner tube is an O-ring.

37. The fluid vapor distillation apparatus of claim **34**, wherein first portion or second portion is made of a high temperature plastic.

38. The fluid vapor distillation apparatus of claim **34**, wherein second portion includes barb fittings.

39. The fluid vapor distillation apparatus of claim **34**, wherein the first portion includes an extension that is received by the second portion to support assembly.

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